Errata for the Staff Final Electric Program Investment Charge: Proposed 2015-2017 Triennial Investment Plan

p. 3, 22, 23, 203. $53.26 million changed to $53.27 million.

Appendix A.

p. 38 changed to be consistent with same issue discussed in Appendix B on p. B-18.

Appendix C.

Updated to include summary and staff responses to written comments received on the Staff Final *Electric Program Investment Charge: Proposed 2015-2017 Triennial Investment Plan*

Appendix E.

Updated to include summary and staff responses to verbal comments received at the February 7, March 17, and March 21, 2014 workshops.

Table E-1: California Energy Commission EPIC Funding by Program Element 2015-2017 (million)

Funding Element	Total
Applied Research and Development	$151.63
Technology Demonstration and Deployment	$145.02
Market Facilitation	$53.27~~$53.26~~
New Solar Homes Partnership (Market Support)	*
Program Administration	$38.88
Grand Total**	**$388.8**

*Up to $130 million.

**Any additional funds that may be allocated to the Energy Commission as a result of any CPI adjustment will be used to increase the budget proportionally across all areas.

Source: California Energy Commission

The *2015-2017 EPIC Investment Plan* is organized by the three specific funding areas with proposed initiatives grouped under strategic objectives. Through the *2015-2017 EPIC Investment Plan*, the Energy Commission intends to issue solicitations in all strategic objectives. Proposed initiatives identified in the *2015-2017 EPIC Investment Plan* represent the full scope of possible awards.

Applied Research and Development – Strategic Objectives

- Improve energy efficiency technologies and strategies in California's building, industrial, agriculture, and water sectors.
- Enable cost-effective demand response for California IOU electricity customers.
- Develop innovative solutions to increase the market penetration of distributed renewable and advanced generation.
- Improve power plant performance, reduce cost, and accelerate market acceptance of existing and emerging utility-scale renewable energy generation systems.
- Reduce the environmental and public health impacts of electricity generation and make the electricity system less vulnerable to climate impacts.
- Advance the use of smart inverters as a tool to manage areas with high penetrations of PV.
- Develop advanced distribution modeling tools for the future smart grid.
- Advance customer systems to coordinate with utility communication systems.
- Advance electric vehicle infrastructure to provide electricity system benefits.
- Advance the early development of breakthrough energy concepts.
- Provide federal cost share for applied research awards.

EPIC Investment Areas and Funding

The CPUC's approach to investments in clean energy research recognizes many market-driven scientific and financial barriers by allocating funding to three interconnected stages of development. The *2015-2017 EPIC Investment Plan* presents the Energy Commission's proposed strategy for administering the three-year amount of $388.8 million.[9] This amount includes $38.88 million for administrative costs and $349.92 million for program awards (Table 1).

- **Applied Research and Development** ($151.63 million; three-year funding to the Energy Commission): These activities support pre-commercial technologies and approaches designed to solve specific problems in the electricity sector, including activities that address environmental and public health impacts of electricity-related activities, support building codes and appliance standards, and clean transportation with a linkage to electricity sector ratepayer benefits.
- **Technology Demonstration and Deployment** ($145.02 million; three-year funding to the Energy Commission and $86.6 million of three-year funding to the three large investor-owned utilities [IOUs]): Technology, demonstration and deployment (TD&D) is the installation and operation of pre-commercial technologies or strategies at a large-enough scale and in conditions that reflect anticipated actual operating environments allowing an appraisal of the operational and performance characteristics , and the financial risks of the project.
- **Market Facilitation** ($53.27~~$53.26~~ million; three-year funding to the Energy Commission): Projects in Market Facilitation are a range of activities that include program tracking, market research, education and outreach, regulatory assistance and streamlining, and workforce development to support clean energy technology and strategy deployment. The Phase 2 decision further clarifies that this category should not necessarily be limited to renewables but may also include any other clean energy technologies and/or strategies.

[9] Adjusted on January 1, 2015 to commensurate with the average change in the Consumer Price Index for Urban Wage Earners and Clerical Workers for the third quarter for the previous three years. California Public Utilities Commission, Decision Addressing Applications of the California Energy Commission, Pacific Gas and Electric Company, San Diego Gas & Electric Company and Southern California Edison Company for Approval of their Triennial Investment Plans for the Electric Program Investment Charge Program for the Years 2012 Through 2014, Application 12-11-001, Application 12-11-002, Application 12-11-003, and Application 12-11-004, as consolidated, ordering paragraph 3, http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M081/K773/81773445.PDF.

A fourth area, **Market Support**, was not specifically allocated funding in the decision by the CPUC; however, the New Solar Homes Partnership (NSHP) fits within the definition of activities that support commercially viable technologies that require public support to meet economies of scale and be competitive with other technologies. The CPUC can allow EPIC funding for Market Support, including funding for NSHP incentives. At this time, the Energy Commission would like to propose keeping all options open for NSHP funding, including combining different funding sources, provided that total funding does not exceed the $400 million cap for NSHP under Senate Bill 1.

Table 1: California Energy Commission EPIC Funding by Program Element 2015-2017 (million)

Funding Element	**Total**
Applied Research and Development	$151.63
Technology Demonstration and Deployment	$145.02
Market Facilitation	$~~53.26~~53.27
Program Administration	$38.88
Sub Total	**$388.8**
New Solar Homes Partnership	*
Total**	**$388.8**

*Up to $130 million.

**Any additional funds that may be allocated to the Energy Commission as a result of any CPI adjustment will be used to increase the budget proportionally across all areas

Source: California Energy Commission

Energy Innovation Pipeline

Ensuring a reliable, safe, clean, and diverse electricity system remains one of the most important elements toward securing California's economic and environmental energy security. For more than three decades, California has endeavored to expand and diversify its energy sources from traditional fossil fuel sources. As a result, these efforts are embedded in state energy policy; however, major barriers remain, including higher costs of new technologies. Private sector investments in early-stage, untested technologies often present financing risks for profit-minded business models. The process for new technologies from early- to market-stage adoption requires several steps known as the **energy innovation pipeline** (Figure 2).

Table 39: Calculating the Proposal Score for Company A

Criteria	Table 38 A Maximum Points	Table 29 B Evaluator applies Scoring Scale	A x B Total points
Technical Merit	20	80%	16.0
Technical Approach	20	80%	16.0
Impacts and Benefits to California Ratepayers	20	80%	16.0
Team Qualifications	10	90%	9.0
Budget Cost Effectiveness	10	80%	8.0
Funds Spent in California	15	70%	10.5
Ratio of Direct Labor and Fringe Benefit Rates to Loaded Labor Rates	5	80%	4.0
Total	100		79.5

Source: California Energy Commission

Table 40 summarizes the three-year funding for market facilitation. This table also shows the estimated minimum and maximum project award per recipient, on average. Some initiatives may exceed the typical maximum project award per recipient. Each solicitation will state a minimum and maximum allowed per bid, tailored to the individual solicitation.

Table 40: Summary of Three-Year Funding for Market Facilitation

3-Year Funding for Market Facilitation	~~$53.26 million~~$53.27 million
Estimated Minimum/Maximum Project Award Per Recipient	$25,000 to $3 million
Match Funding Requirement	None. Those providing match funds will receive higher scores during proposal evaluation.

Source: California Energy Commission

Two-Phase Application Process

Some solicitations may use a two-phase selection process. The first phase involves preparation of a brief abstract to determine technical merit. The abstract will be evaluated on a pass/fail or scoring scale (similar to Table 28) basis according to specific criteria, such as those listed in Table 41. The abstract must pass all criteria (if using pass/fail basis) or achieve a minimum score on all criteria (if using a scoring scale) to proceed to the second phase and submit a full proposal. The full proposal will be evaluated according to the scoring scale in Table 29, and the applicable technical scoring criteria for Applied Research and Development, Technology, Demonstration, and Deployment, and Market Facilitation, Tables 30, 35 and 38, respectively.

near-term distribution of critical clean energy technology upgrades to achieve GHG and critical copollutant reductions in underserved and economically disadvantaged California communities.

Discussion and Staff Response

Ideas in this comment helped develop Initiative S18.1: *Facilitate a Commercialization Assistance Network to Foster Successful Clean Energy Entrepreneurship* in the proposed *2015-2017 EPIC Investment Plan*. This initiative will help facilitate a network of stakeholders to provide commercialization assistance, services, and insights into specific market opportunities and customer needs. In addition, this initiative includes possible funding to convene a consortium of clean energy customers to define and articulate end-user needs for the electricity sector in IOU services territories. Information and intelligence from this consortium would be disseminated and deployed to the network of incubators and accelerators.

Open-Source Standards

Summary of Comments

TN 72526 1EnergySystems:[118] 1EnergySystems recommended EPIC funding to support developing open, nonproprietary standards to integrate energy storage, distributed energy resources, demand response, and related technologies into the smart grid.

Discussion and Staff Response

Southern California Edison (SCE), Pacific Gas and Electric (PG&E), and San Diego Gas and Electric (SDG&E) have identified open communication and control standards for storage and other devices as a high priority item for their second EPIC investment plans.[119] The Energy Commission's research will focus on interconnection standards and communication protocols to accelerate interoperability, scalability, safety, quality, availability, and affordability in energy storage, inverters, and microgrid components and systems. Applied research for smart inverters is included in Strategic Objective S6: *Advance the Use of Smart Inverters as a Tool to Manage Areas with High Penetrations of PV*. Technology demonstrations and deployments for microgrids and energy storage are included in Strategic Objective S14: *Take Microgrids to the Next Level: Maximize the Value to Customers* and Strategic Objective S15: *Demonstrate Advanced Energy Storage Interconnection Systems to Lower Costs, Facilitate Market and Improve Grid Reliability,* respectively.~~The *2015-2017 EPIC Investment Plan* includes Initiative S7.1: *Develop Open-Source Electricity System Modeling Tools to Visualize California's Modern Distribution Systems*. This initiative will develop open-source modeling tools that incorporate all smart grid elements and simulate the operation of California's future "smart" distribution system.~~

118 http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/comments/1Energy_Systems_Inc_EPIC_Triennial_Plan_2014-02-11_TN-72526.pdf.

119 http://www.energy.ca.gov/research/epic/documents/2014-03-17-21_workshop/presentations/Investor-Owned_Utilities_Presentation_EPIC_Stakeholder_Workshop.pdf.

APPENDIX C:
Summary of Stakeholder Comments and Energy Commission Staff Responses on *the Electric Program Investment Charge Proposed 2015-2017 Triennial Investment Plan*

~~[Staff will provide summaries and responses to comments on the plan scheduled to be considered at the April 22, 2014, business meeting of the Energy Commission.]~~

Demand-Side Management

Home Automation Network Devices and Systems

Summary of Comments

TN 72907, Bidgely, Inc.: Bidgely, Inc., recommends that "gateways" which can leverage California's AMI infrastructure, be added to the list of technologies listed in the third paragraph of page 123 of eligible product lines/technologies for which demonstration funds could be used in EPIC's second triennial investment plan. Bidgely also states, "Arguably, gateways are already covered through the mention of 'cost-effective retrofit technologies' or 'other cost-effective technologies,' but we would submit that the promise of AMI-enabled technologies such as gateways, or more generally, 'HAN devices,' is high enough that it would be helpful to provide explicit guidance."

Staff Discussion and Response

In response to these comments, staff has changed the last paragraph in the purpose section of S12.1, page 123, to make a non-substantive change to the list of examples to add "home automation network devices and systems."

Staff agrees that HAN technologies should be specifically included in the list, even though they are included in the broad categories. Staff agrees that this category of technology will likely be subject of significant interest during the funding period. However, rather than restrict the category to "gateways", as suggested by the commenter, staff believe all possible home automation system designs and configurations should be included. Further specification will be addressed during development of the competitive solicitations.

Cross-Cutting

Standards for Smart Inverters, Energy Storage, and Microgrids

Summary of Comments

TN 72913, MESA and SUNSPEC: The Two alliances of MESA and SUNSPEC assert that the Commission can and should play a stronger role in supporting the development of standards for smart inverters, energy storage, and microgrids as it has with the demand response. They assert that given California's ambitious goals for renewables and energy storage, the lack of funding to advance standards for interoperability in the next Plan would represent a serious lost opportunity and risk for the state's electrical grid. The alliances refer to the recent deployments experience of smart meters without any common standards to foresee the unnecessary costs and lost benefits from that deployment. They recommend that the Energy Commission can send an important policy signal for open standards and accelerate industry efforts to reach agreements by creating a new strategic funding initiative under the Market Facilitation heading.

Staff Discussion and Response

Southern California Edison (SCE), Pacific Gas and Electric (PG&E), and San Diego Gas and Electric (SDG&E) have identified open communication and control standards for storage and other devices as a high priority item for their second EPIC investment plans.[1] The Energy Commission's research will focus on interconnection standards and communication protocols to accelerate interoperability, scalability, safety, quality, availability, and affordability in energy storage, inverters, and microgrid components and systems. Applied research for smart inverters is included in Strategic Objective S6: *Advance the Use of Smart Inverters as a Tool to Manage Areas with High Penetrations of PV*. Technology demonstrations and deployments for microgrids and energy storage are included in Strategic Objective S14: *Take Microgrids to the Next Level: Maximize the Value to Customers* and Strategic Objective S15: *Demonstrate Advanced Energy Storage Interconnection Systems to Lower Costs, Facilitate Market and Improve Grid Reliability*, respectively

[1] http://www.energy.ca.gov/research/epic/documents/2014-03-17-21_workshop/presentations/Investor-Owned_Utilities_Presentation_EPIC_Stakeholder_Workshop.pdf.

APPENDIX E: Summary of Verbal Stakeholder Comments and Energy Commission Staff Responses on the Electric Program Investment Charge Proposed 2015-2017 Triennial Investment Plan

~~[Staff will provide a summary of verbal comments from participants who did not subsequently submit written comments, including comments from public workshops held in 2014 to develop the Energy Commission's Proposed 2015-2017 EPIC Investment Plan.]~~

The Energy Commission held public workshops to discuss scoping for the Electric Program Investment Charge *2015-17 EPIC Investment Plan* on February 7, 2014, in Sacramento, California,[1] and workshops to discuss proposed initiatives on March 17, 2014, in Sacramento, California, and March 21, 2014, in Westminster, California. Several participants offered verbal public comment during the workshop, most of which provided written comments as well. Many others submitted written comments/questionnaire responses to the Energy Commission for consideration.

Below is a summary of comments presented during the workshop not subsequently included in written comments. During the workshop, panelists and Energy Commission staff provided responses to many of these comments. Additional responses are provided below. Staff has considered verbal comments, along with those submitted in writing, in preparing the staff final proposed *2015-17 EPIC Investment Plan*.

Verbal comments from the February 7 Scoping Workshop

Methane Flare Gas Recovery, Molten Salt Reactors, and Other Topics

Summary of Comments

Walter Horsting from Business Development International (BDI) on behalf of Terrestrial Energy and Light Systems asked Blaine Collison of the US Environmental Protection Agency (EPA), if there are any programs in the United States for methane flare gas recovery.

Walter Horsting asked Camron Gorguinpour of the US Department of Defense, "in your global based deployment, are you looking at molten salt reactors for base electrical supply in terms of something very compact and mobile?"

[1] The transcript from the February 7, 2014 workshop is available online at: http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf.

Walter Horsting asked Randy Walthers of Raley's, if Raley's fleet "is going into a natural gas mode and whether it could be looking at a source of fuel such as Naphtha to burn?" [2]

For Josh Gould, ARPA-E, US Department of Energy, Mr. Horsting asked if there was any research of funds out there for mitigating flare gas emissions.

Mr. Horsting also asked Mr. Gould a question regarding rare earth elements. Mr. Horsting stated that green energy requires a large amount of rare earth elements, lithium for batteries, magnesium for magnets, and various rare earth elements for solar panels. He said there is a vast wasteland of toxic material leftover, including thorium, from mining rare earth elements. Mr. Horsting suggested that the federal government look at the possibility of a federally charted development bank for thorium and rare earth elements to allow the private sector to develop a useful local stream of rare earth elements from material leftover from rare earth mining.[3]

Panelist and Staff Responses

Blaine Collison stated the EPA has methane recovery programs and natural gas startup programs.[4]

Camron Goruinpour commented that he was not aware of any DOD programs specific to methane flare gas. In addition, he stated that he has not heard of DOD projects using molten salt reactors.[5]

Randy Walthers of Raley's responded that previously Raley's found natural gas trucks were not powerful enough to transport their goods over the mountains. Raley's is looking into newer natural gas trucks with this capability.[6]

Josh Gould of ARPA-E, US DOE commented that the DOE cannot talk about potential future programs before they are officially announced, to ensure fairness for potential applicants. Mr. Gould also stated the DOE has a program investing $35 to $40 million for finding rare earth replacement materials.[7]

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[2] http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf. (p. 86, Line 3)
[3] http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf. (p. 141, Line 7)
[4] http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf. (p. 88, Line 2)
[5] http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf. (p. 87, Line 19)
[6] http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf. (p. 86 Line 16)
[7] http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf. (p. 148, Line 9)

Focus on High Priority Projects

Summary of Comments

Laurie ten Hope from the Energy Commission asked panelists to offer suggestions on how to prioritize selection of projects for EPIC funding to ensure the focus is on the best possible candidates.[8]

Panelist and Staff Responses

Beverly Alexander of the Energy Institute at HAAS, UC Berkeley responded they ask two groups to screen applications. The first consists of internal UC Berkeley experts who have worked in tech transfer and who have experience commercializing technical innovations in the energy sector. The second is an investment-oriented group. Out of those two screenings, they pick their winners.[9]

George Crandell of Technikon commented that they have an internal screening process that narrows down the projects. They send the narrowed set of projects to the funding source to seek approval.[10]

Josh Gould of ARPA-E, US DOE said ARPA-E tailors commercialization assistance to the needs of each team of entrepreneurs participating in ARPA-E programs.[11]

Jennifer Garson of EERE, US DOE, explained that EERE Commercialization Assistance programs fund other organizations to find good teams and companies. To be considered for EERE commercialization assistance, each team or company must show a strong commitment to developing its technology.[12]

Verbal Comments from the March 17 Workshop

Indoor Environmental Quality

Summary of Comments

Mr. Fred Bauman from the Center for the Built Environment, UC Berkeley, said, "it is important to specify strategies that will improve and promote indoor environmental quality in relation to all of the energy efficiency and demand response research efforts." In his view, indoor environmental quality research should include thermal comfort and overall indoor

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[8] http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf. (p. 144, Line 10)

[9] http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf. (p. 144, Line 17)

[10] http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf. (p. 146, Line 24)

[11] http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf. (p. 146, Line 16)

[12] http://energy.ca.gov/research/epic/documents/2014-02-07_workshop/2014-02-07_transcript.pdf. (p. 149, Line 7)

environmental quality, which are important for the success and adoption of any efficiency or demand response technology. Mr. Bauman encouraged staff to explicitly include these topics in the investment plan.[13]

Panelist and Staff Responses

Staff has included S1.1: *Advance Efficient Solutions for Lower Energy Buildings* in the proposed *2015-2017 EPIC Investment Plan*. This initiative will address strategies to improve energy efficiency and performance of major energy-using systems. The initiative will also support expanding acceptance of energy efficiency measures. In addition, staff has included indoor environmental quality (IEQ) research in the *2015-2017 EPIC Investment Plan* under research initiative S1.4: *Develop and Evaluate Strategies to Improve Indoor Air Quality in Energy-Efficient Buildings*. The initiative may include research on factors that influence human behavior affecting IEQ and the impacts of poor IEQ on occupants.

Demand Response for Grid Stabilizing Services

Summary of Comments

Dave Watson from Slice Energy suggested the investment plan emphasize newly emerging demand response (DR) technologies that can provide regulation up and regulation down ancillary services, similar to grid stabilizing services available from generators.[14]

Panelist and Staff Responses

Initiate S2.1: *Develop and Test Demand Response Technologies to assess Performance, Increase Reliability and Improve Forecasting Techniques* specifically includes development of technologies that "…provide control…capabilities sufficient to replace fossil generation in providing ancillary services…" Development of technologies that provide regulation up and regulation down clearly falls within this research area.

Solid State Lighting

Summary of Comments

Walter Silva with Phillips Lumileds Lighting Co. suggested the investment plan identify lighting as a separate category. Within the lighting category, Mr. Silva suggested a separate research initiative for solid state lighting.[15]

Panelist and Staff Responses

Lighting is specifically called out under Initiative S1.1: *Advanced Efficient Solutions for Lower Energy Buildings* to advance next generation lighting technologies, controls, and systems to provide improved energy efficiency and customer satisfaction. Research and development of advanced lighting technologies will be considered for funding under this Initiative. Also, a competitive research solicitation from the 2012-14 EPIC Investment Plan released March 2014 includes funding for developing and testing of next generation lighting systems, such as

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[13] http://energy.ca.gov/research/epic/documents/index.html#0317212014. (p. 85, Line 4)
[14] http://energy.ca.gov/research/epic/documents/index.html#0317212014. (p. 76, Line 10)
[15] http://energy.ca.gov/research/epic/documents/index.html#0317212014. (p. 77, Line 12)

advanced light emitting diode technologies. For more information: www.energy.ca.gov/contracts/epic.html#PON-13-301

Federal Cost Share for Offshore Energy

Summary of Comments

Bill Toman stated that he is working with CalPoly San Luis Obispo on a DOE grant to facilitate siting and costing studies for potentially siting a national wave energy test center offshore from California. He commented on the issue of federal cost share. He is concerned that EPIC limits cost share to 10 percent of the project cost. Further, he states that DOE has told him that they wonder why there is an apparent lack of support for wave energy on the part of the state of California. He would like to look to the Energy Commission to help provide an answer to that question from the DOE, and to address the issue of limiting EPIC fund cost sharing to 10 percent of project costs.[16]

Panelist and Staff Responses

Regarding wave energy, at this time, the Energy Commission does not propose to allocate EPIC funding for offshore energy technologies. The guiding principles of EPIC and SB 96 (Statutes of 2013) direct the Energy Commission to focus strategically on the highest priority research and administer EPIC funds to improve electricity system reliability, safety, and affordability in California for EPIC ratepayers; and help achieve the state's policies for clean energy. Based on these policy drivers for EPIC, other areas are currently higher priority for achieving near-term benefits for EPIC ratepayers.

In the first Investment Plan, the Energy Commission allocated up to 10 percent of the total funding for Applied Research and Development and Technology Demonstration and Deployment, $15.8 million and $12.9 million respectively, to be used as federal cost share. Individual projects are not capped at 10 percent.

Schedule for EPIC Funding Opportunities

Summary of Comments

Ken Broome, following up on his response to the Energy Commission's EPIC questionnaire to demonstrate commercial scale low head hydro power, asked when EPIC funding opportunities will be available and how much time applicants will have to respond.[17]

Panelist and Staff Responses

Energy Commission staff responded that a schedule of funding opportunities for the *2012-2014 EPIC Investment Plan* is available on the Energy Commission Web site. The schedule will be updated as more information becomes available. Concerning the *2015-2017 EPIC Investment Plan*, the funding initiatives are staff proposals at this point. The plan will not be finalized until the end of 2014. The plan must be approved by the Energy Commission and the California

[16] http://energy.ca.gov/research/epic/documents/index.html#0317212014. (p. 72, Line 24)
[17] http://energy.ca.gov/research/epic/documents/index.html#0317212014. (p. 74, Line 22)

Public Utilities Commission. Staff does not anticipate solicitations from the *2015-2017 EPIC Investment Plan* until spring 2015 at the earliest.[18]

Vision and Structure of the Proposed Investment Plan

Summary of Comments

Scott Elrod, Palo Alto Research Center, commented that he was concerned that for $160 million, this is a "very ambitious agenda." He suggested organizing solicitations around a vision for the future energy system. For example, he suggested focusing on "the energy user in the home of the future" or "the corporation of the future and its interaction with the energy system." He suggested limiting the investment plan to 10 solicitations or 15 solicitations, addressing different pieces of the value chain, such as the communication required, the energy storage required, and the renewable generation that could be sited in those places. This would further focus the effort and ensure that there is enough money to help advance the vision.[19]

Mark Berman, Davis Energy Group, echoed Mr. Elrod's comments on this topic. Mr. Berman commented that he was concerned that the available funding may be spread too thin across too many initiatives. Mr. Berman suggested the investment plan focus on the theme of efficiency within buildings and energy in and on buildings for both new and existing buildings. He recommended the theme include a focus on how to motivate homeowners to take actions that are in their own interest.[20]

Panelist and Staff Responses

Staff acknowledges these comments and may further consolidate initiatives when preparing solicitations.

The guiding principles of EPIC and SB 96 direct the Energy Commission to focus strategically on the highest priority research and administer EPIC funds to improve electricity system reliability, safety, and affordability in California for EPIC ratepayers; and help achieve the state's policies for clean energy. Based on these policy drivers for EPIC, the proposed *2015-2017 EPIC Investment Plan* includes initiatives in high priority areas for achieving near-term benefits for EPIC ratepayers and overcoming barriers to achieving California's clean energy goals. The CPUC Phase 2 decision (Decision 12-05-037) requires EPIC investments to be linked to the elements of the electricity "value chain," which consists of grid operations/market design, generation, transmission, distribution, and demand-side management.

The vision that drives EPIC investments administered by the Energy Commission is removing barriers and stimulating breakthroughs to achieve a more resilient and reliable electricity system for California featuring near-zero-net energy buildings, highly efficient businesses, low-carbon generation, sustainable bioenergy systems, more localized generation, and the electrification of transportation. To support and integrate these features, the *2015-2017 EPIC*

[18] http://energy.ca.gov/research/epic/documents/index.html#0317212014. (p. 75, Line 15)
[19] http://energy.ca.gov/research/epic/documents/index.html#0317212014. (p. 78, Line 14)
[20] http://energy.ca.gov/research/epic/documents/index.html#0317212014. (p. 82, Line 24)

Investment Plan also includes initiatives for advances to achieve a highly flexible and robust distribution and transmission infrastructure.

The proposed initiatives identified in the *2015-2017 EPIC Investment Plan* represent the full scope of possible awards and includes energy efficiency, demand response, clean generation, smart grid enabling technologies, transportation, and market facilitation. The Energy Commission may not issue solicitations or make awards in every initiative area if funding is inadequate, there is a lack of qualified applicants, or further analysis of market conditions indicates that an initiative is not currently a high priority or it is already adequately funded by other entities.

Verbal Comments from the March 21 Workshop

Commercialization Assistance

Summary of Comments

Mr. In S. Kim of ADC Energy USA, Inc. commented that ADC Energy has a demonstration of its new patented technology that can help reduce energy use for lighting or future electronics. ADC Energy seeks information and assistance on next steps for commercializing this patented technology.[21]

Panelists and Staff Responses

The proposed *2015-2017 EPIC Investment Plan* includes initiatives to help commercialize emerging clean energy technologies in S18: *Foster the Development of the Most Promising Energy Technologies into Successful Businesses*. Funding will be awarded through a competitive process.

Federal Cost Share

Summary of Comments

Kelly Hull with Bright Footprint asked for clarification of Strategic Objective S11: *Provide Federal Cost Share for Applied Research Awards*, which would provide federal cost share for applied research awards. She asked whether S11 refers to funding from Proposition 39, passed by California voters in 2012.[22]

Panelists and Staff Responses

If a project is pursuing a federal opportunity announcement (FOA) that requires cost share, the *2015-2017 EPIC Investment Plan* includes two initiatives that provide EPIC funds for this purpose, through S11 and S17. Cost share funding will be awarded through a competitive process. For projects deemed eligible for S11 or S17 funding, the Energy Commission could provide a letter of support or commitment stating that if the project received the federal award, then EPIC funds could be used as potential cost share for the project. However, S11 and S17 only apply to use of EPIC funds for federal cost share and not cost share for state programs.

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[21] http://energy.ca.gov/research/epic/documents/index.html#0317212014. (p. 56, Line 24)
[22] http://energy.ca.gov/research/epic/documents/index.html#0317212014. (p. 57, Line 18)

State incentives and funding (e.g. Proposition 39 funding) could be used as match funding in EPIC competitive solicitations if it meets the project and match fund requirements stated in the applicable solicitation. Please refer to specific EPIC solicitations regarding project and match funding requirements at: www.energy.ca.gov/contracts/epic.html.

Verbal Comments from the April 22 Business Meeting

Please see the transcript for the April 22, 2014, business meeting for information on verbal comments and responses during the business meeting.